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DISCUSSION

Dr Michele Carmo (*Milan, Italy*). My first question is about your recommendation of a new threshold of 3.5 cm, which, if I understood well, is based on the observation of a cohort of patients where you operated on patients who reached the 2.5 threshold. And, this doesn't make a lot of sense to me, because I would rather make this recommendation after following a cohort of patients where surgery was delayed at the 3.5 threshold and no complications were observed.

Dr Gustavo Oderich. The average diameter in the cohort who underwent observation was 3 cm, and after a mean follow-up of 49 months, there were no complications among patients with aneurysms <3.5 cm. Yes, we have not followed patients indefinitely and 61 of 114 patients were repaired for "growth" or size >2.5 cm, with average size of 2.9 cm in this subset of patients. If we look at the 12 patients that had an acute event, the average size was 5 cm; and in fact, there was one patient with a 3.5-cm aneurysm, and the others had aneurysms significantly larger than 4 cm.

So, the best recommendations we can make based on this retrospective review are that there were no complications for aneurysms <3.5 cm, and therefore this size can be considered as a new threshold for repair. I do agree the study has limitations due to the design and lack of predefined protocol, but it does show that complications have not occurred in smaller aneurysms, and most certainly there is little evidence that repair is really needed earlier for smaller aneurysms.

Dr Carmo. My second question is: would you recommend a lower threshold for patients with a particularly active life, for example, riding a bike or gardening, where hip movements can have some impact?

Dr Oderich. This study also shows that even in a multicenter experience, the repair can be done safely with very low mortality and morbidity. So, it's difficult to argue not to repair a patient that is young, healthy, and has a very active lifestyle as you outlined. Our data have shown that age <60 years old was independently associated with higher rates of aneurysm complications. I do think that it is reasonable to repair the aneurysm at a smaller size, larger than 2.5 cm, in a younger patient, particularly if there is growth or any concern due to thrombus.

Dr Kamran Karimi (*Cedar Falls, Iowa*). Would your threshold of repair be different in a common femoral artery aneurysm if the superficial femoral artery is occluded?

Dr Oderich. Good question. We analyzed the threshold as a group. But, evidently as we move distal on the circulation, that may not necessarily apply. The few superficial femoral artery aneurysms included in this study were in the very proximal, encroaching the common femoral artery. For distal superior femoral artery aneurysms, we use the same recommendations as for popliteal aneurysms.

Dr George Hamilton (*London, United Kingdom*). You've got potentially two groups here. I just wonder whether you analyzed for the effect of best medical therapy and particularly the use of statins. Did you find a difference between the two? In other words, the groups that you didn't operate on that didn't expand and the group that did.

Dr Oderich. Well, the credit really goes to Dr Lawrence. He has a number of other ongoing projects, and I would welcome the membership to contact him if interested in collaborating.

Dr Hamilton. The question was really about the use of statins and best medical therapy, not endovascular therapy.

Dr Oderich. To answer your question, we have no information on medical therapy.

Dr George Meier (*Cincinnati, Ohio*). Gustavo, I noticed that your length of stay was 7 days on average. Was that due to outliers, or were they really in the hospital that long? It seems longer than I would expect.

Dr Oderich. I agree. One limitation of the data set is that there is a number of patients who had concomitant aortic repair, explaining the longer length of stay. And, perhaps Dr Lawrence can comment on that, but that is a limitation of the data set and I don't have the information on the details of that.

Dr Peter Lawrence (*Los Angeles, Calif*). This database approach provides a very large data set, but there are some limitations to analysis. The prolonged length of stay reasons are unique to each institution, but they are skewed by the emergent femoral aneurysms with thrombolysis and amputation. Also this is a 10-year study, so the data go back to an era when length of stay was not such a big issue. I believe that length of stay would be much shorter if the data were collected in 2013, particularly for those patients who had an elective femoral aneurysm repair.

Dr Rombout Kruse (*Zwolle, The Netherlands*). Very interesting to see these diseases being treated in your presentation that are so rare. I have a question about the groin infections. If I have it correct, you saw 12% groin infections. Did you use in your study only Dacron, or did you also use venous interposition or other materials?

Dr Oderich. The rate of 12 complications actually includes a combination of all wound-related complications and that consists of seromas, lymphatic leaks, and infections. The most common conduit used is polyester graft. Vein has not been used to replace at least in a larger number of patients.